ENERGY DRINKS IN ATHLETICS



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Newest Craze

Wake up and smell the coffee has been replaced with ------

Wake up and taste the ephedrine, guarana, and taurine





What are Energy Drinks?



- Energy drinks are beverages that contain varying amounts of:
- Caffeine
- Carbohydrate
- Other stimulants

- Caffeine stimulates the central nervous system leaving the athlete with the perception of energy

Examples

- Red Bull
- Vernom
- Adrenalin Rush
- 180
- ISO Sprint
- Energy Bomb
- SoBe
- Vault



- Monster
- Atomic Energy
- Blue Ox
- Dark Dog
- Hansen's Hard E
- Niagra
- Power House
- Cocaine

Mainstream:

- Major corporations such as Pepsico, Coco-Cola, and Anheuser Busch even produce their own energy drinks





Popularity

- Wide audience
- Mass Marketing





Why athletes?

- They:
  - Experience fatigue
  - Are looking for an edge
  - Are encouraged to increase fluids
  - Want an easy way to get more carbs
  - Believe they need extra vitamins or minerals



Product Promotion / Hook

- Ads claim they will
  - Improve endurance
  - Increase muscle mass
  - Help with recovery
  - Sharpen the central nervous system
  - Burn fat tissue





Components of Energy Drinks

The truth behind the claims



CARBOHYDRATES



- GLUCOSE
  FRUCTOSE
- SUCROSE
  GALACTOSE
- DEXTROSE
  MALTRODEXTRINE





- The Main ingredient is
  SUGAR



Product Claim

- Taste Good
- Provide Energy
- Enhance Performance



Truth

- Carbohydrate concentration is too high for before or during exercise
  - 6-8 % carbs is optimal
  - 14g. of carbs in 8 oz drink
  - In most energy drinks the carbs are 2x more than optimal for performance
- May cause stomach upset
- Can be effective for replacing energy after exercise

Vitamin Drinks

- B vitamins
- Antioxidants
  - Vitamins C & E
  - Betacarotene
  - Selenium







Claim

- Essential for
  - Normal body functions
  - Energy Metabolism
  - Prevention of tissue breakdown and aging











Truth

- Amounts in energy drinks range from excessive to minimal (No regulation of energy drinks)
- Do not affect athletic performance (These extra vitamins do not give an athlete an ergogenic aid effect

Pyruvate



- Naturally occurring metabolic by-product
- Appears as a "performance booster"







Claim







- Enhance aerobic metabolism
- Fatigue fighter & Fat burner

Only 25 Calories
- 25 mg Ephedra Alkaloids
- 200 mg Caffeine
- Synephrine
- White Willow
- Theobromine
- 30 mg Niacin
- 200 mcg Chromium
- NO ADDED SUGAR





Truth

- Some improvement in exercise when given in extremely large quantities
- Problem: Severe stomach and intestinal discomfort
- Bottom line: In tolerable amounts, an erogenic effect



Protein & Amino Acids

- Branched-chain amino acids
  - -leucine, isoleucine, and valine
  - Glutamine
  - Arginine
  - Taurine (This is the buzz word)

Claim

- Provide energy
- Improve glycogen stores
- Enhance immune system
- Delay fatigue



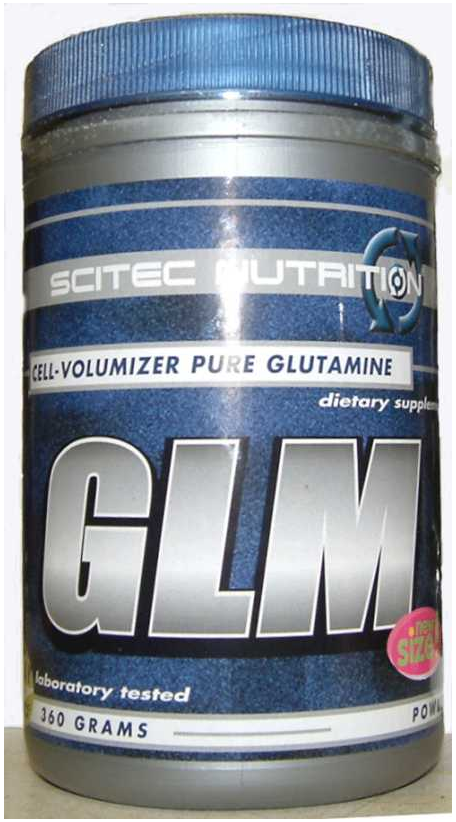




Truth



- The body prefers carbs for energy
- They do not enhance immune response or glycogen synthesis
- Most people get plenty of dietary protein and amino acids (2 x needed amounts)
- Protein after exercise may be beneficial (30 minutes after exercise)
- No evidence of effect on performance in humans
- Simply drink chocolate milk



CREATINE



- Naturally-occurring amino (not technically an amino acid)
- Plays a role in energy metabolism
- Typical creatine-loading regimen is 20g/day for five days

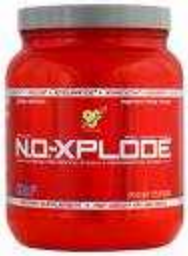




Claim

- Enhances performance
- Increases strength, speed, & endurance
- Delay fatigue in high intensity exercise















Truth

- The amounts of creatine added to most energy drinks is too small to be of any benefit to performance
- Athlete would have to drink about 178 servings/day for 5 days to get creatine load
- Caffeine negates effect of creatine

















HERBS



- GINSENG

- Claim:
  - Increase energy, relieve stress
  - Truth:
  - No proof of efficacy
  - May interfere with medications



CAFFEINE





- Naturally-occurring
- Classified as a drug









CLAIM

- Improves performance
- Stimulates brain function and metabolism



TRUTH

- Central nervous system stimulant
- May improve athletic performance
- Laxative and diuretic if consumed too far in advanced and cause dehydration
- May cause nervousness and increase heart rate
- Addictive – athlete may require higher doses to achieve the same “caffeine high”

- Amounts in beverages:
  - 8 oz coffee: 80- 150 mg
  - Soda: 25 – 40 mg
  - Energy drinks: 80 – 200 mg

“Natural caffeine”



- Guarana extract
- Kola nut extract
- Yerba mate extract
- Yohimbe





- All have same effect as caffeine





CLAIM

- Like caffeine, improve performance & stimulate brain and metabolism

- TRUTH:
  - The amount and quality are not regulated
  - May have unwanted side effects (headaches)
    - May contain contaminants

STIMULANTS & FAT BURNERS



- Ephedrine- even though off the market still out there in lesser strengths & Ephedra

Around 300 documents deaths

- Synethrine-Most popular
- Ciwujia
- Hydroxycitrate
- Bitter Orange

CLAIM



- Reduce body fat
- Stimulates brain function
- Speed metabolism



TRUTH

- Many side effects:
- Tremors or shaking
- Sleep disturbance
- Gastrointestinal upset
- Increased blood pressure or heart rate
- Anxiety
- Increased urine production
- Decreased performance after let down
- When combined with caffeine can compound side effects

SO, ARE ENERGY DRINKS A GOOD IDEA FOR ATHLETES?



Not before or during exercise

- High carbohydrate concentration = stomach upset
- Slow absorption of water
- Caffeine is banned by IOC in large amounts (~ 3 cans/day)
- They will provide a boost but then drop
- NOT regulated by the FDA



May be okay after exercise

- Carbohydrates can replace glycogen stores
- Need recovery fluids
- Need to read the label to know what the drink contains and in what quantities



A better way to energize

- Rest
- Sleep
- Stress management
- Well- fueled diet
- Adequate fluids all day***
- Sports drinks for exercise



SPORTS DRINKS



- Better carbohydrate concentration before and during exercise
- Optimal carbohydrate content after exercise
- Electrolytes









Energy Drinks and Alcohol



- Stimulant (energy drink)

+

Depressant (alcohol)

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Dangerous

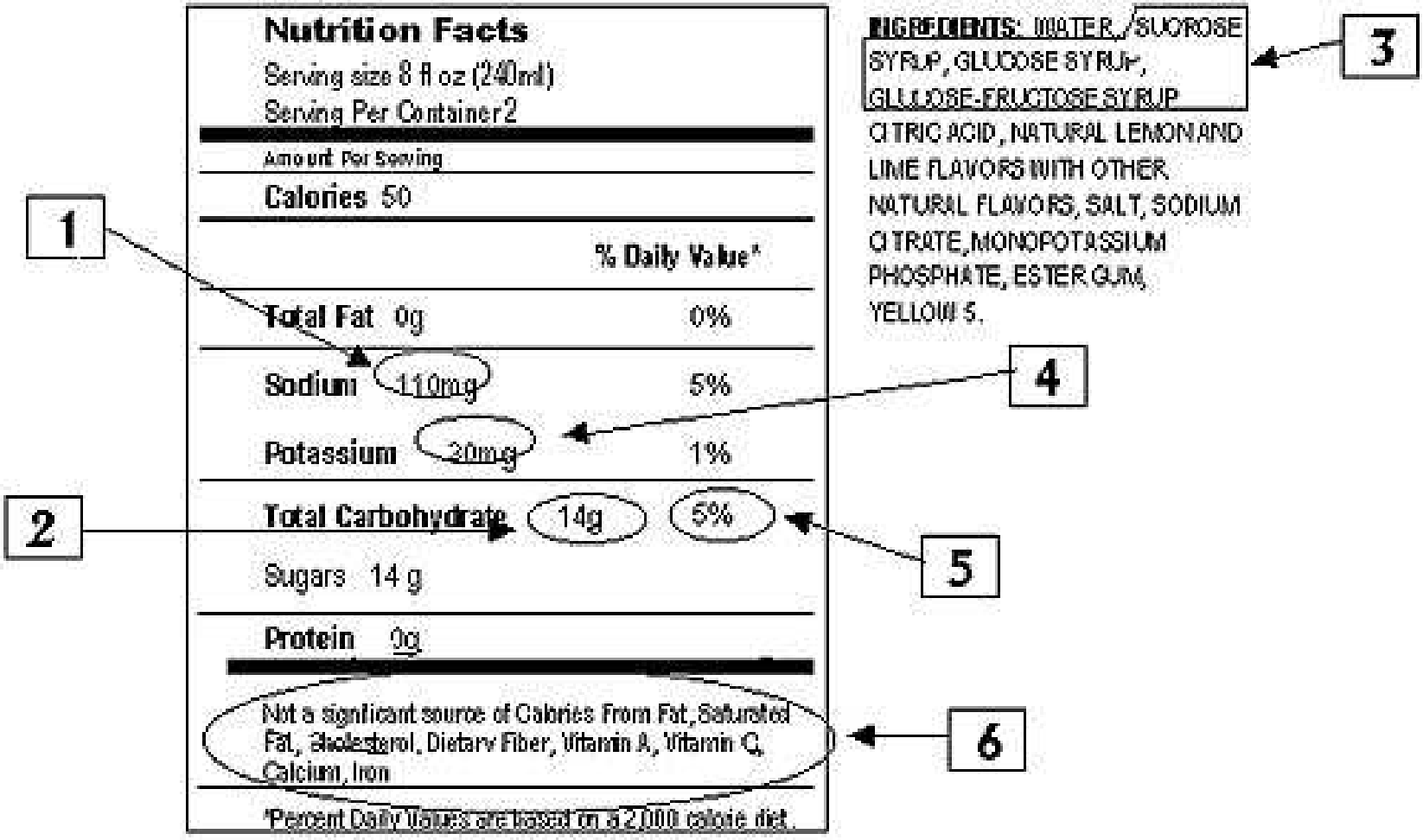


Possible adverse affects

- Dehydration
- Vomiting
- Seizure
- Heart arrhythmia
- Insomnia
- Headaches
- Nervousness
- Nosebleeds
- Impaired performance
- Disguise Intoxication
- Death



Reading an Energy Drink Label



- Gatorade Sports Science Institute 2006

The Bottom Line on Energy Drinks

- There are better ways to energize
- There are less expensive caffeine sources
- Athletes should avoid herbs if they are taking medications
- Users should read the labels
- Athletes need to know if the ingredients are legal and safe

- If ads make grand promises, be wary
- See if there is research to back up their claims
- Not recommended for athletes before or during exercise
- Educate your athletes about food and fluids that are better!!

DRINK RESPONSIBLY

